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(54) Title: METHOD AND KIT FOR THE CHARACTERIZATION OF ANTIBIOTIC–RESISTANCE MUTATIONS IN *MYCOBACTERIUM* TUBERCULOSIS

(57) Abstract

Amplification and cycle sequencing primer sets have been developed for the detection and analysis of antibiotic resistance–associated mutations in defined regions of the rpoB (rifampin), katG (isoniazid), oxyR–ahpC PR (isoniazid), mabA (isoniazid), rpsL/s12 (streptomycin), 16S/rrs (streptomycin), embB (ethambutol), pncA (pyrazinamide), gyrA (ciprofloxacin) and 23S (azithromycin) genes of *Mycobacterium tuberculosis*. These primers can be used in a method for detection and characterization of *Mycobacterium tuberculosis* present in a sample. The method includes the steps of obtaining a sputum sample suspected of containing M. tuberculosis, performing a first sequencing procedure, with or without prior amplification, on the sample to detect the presence of *M. tuberculosis*, and if present to evaluate the rpoB, katG, rpsL/s12 and 23S genes for the presence of antibiotic–resistance inducing mutations; and (c) if *M. tuberculosis* is detected in step (b), performing a second sequencing procedure, with or without prior amplification, on the sample to evaluate the additional genes for the presence of antibiotic–resistance inducing mutations.